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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,508	07/27/2005	Magnus Leinemann	ZAHFRI P744US	6825
20210 7590 01/25/2007 DAVIS & BUJOLD, P.L.L.C. 112 PLEASANT STREET CONCORD, NH 03301			EXAMINER CHRISTENSEN, RYAN S	
			ART UNIT	PAPER NUMBER
			2856	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/25/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/532,508	Applicant(s) LEINEMANN ET AL.	
	Examiner Ryan Christensen	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-18, 20, 22-27 is/are rejected.
- 7) ☒ Claim(s) 19, 21 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/25/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Claim 17 is objected to because of the following informalities: The separator is designated with the reference character "7", this is inconsistent with the remainder of the application, which designates the separator as "15" and "7" to designate a drill tube. Appropriate correction is required.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "water jet pump" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional

replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 21 is objected to because of the following informalities: after "Venturi pipe (9)" the "and" appears to be a grammatical error. Appropriate correction is required.
5. Claims 25, 26, and 27 are objected to because of the following informalities: in order to read as a step "prevention of" should read "preventing."

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 15, 16, 22, 25, 26, 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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8. With respect to claims 15, 25, 26, and 27, the phrase "in particular related to transmission oils" renders the claim indefinite because it is unclear whether the claim is limited to transmission oils or not. See MPEP § 2173.05(d).
9. With respect to claim 16, the term "extensive" is a relative term, which renders the claim indefinite. The term "extensive" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.
10. Claim 22 recites the limitation "the temperature regulating container." There is insufficient antecedent basis for this limitation in the claim. It appears claim 22 was intended to depend from claim 21, but it currently depends from claim 20.
11. With respect to claims 25, 26 and 27, "filling up of the oil being tested by means of the receptacle in the air oil mixer" is so unclear as to render the claim indefinite. Does this mean the receptacle is being filled with the oil to be tested, or that the receptacle is a means for introducing the oil to be tested to the air-oil mixer?
12. With respect to claims 25, 26, and 27, it is unclear what "filling up more of the oil being tested" means for the same reasons mentioned above. Does this mean the receptacle is being filled with more oil to be tested, or that the receptacle is a means for introducing more oil to be tested to the air-oil mixer?
13. Claims 25, 26, and 27 recite the limitation "the receptacle (14)." There is insufficient antecedent basis for this limitation in the claim.

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14. With respect to claim 25, "transfer of all oils being tested and measurement of all regulating volume flows at respective constant volume flows" is not a step. Is the claim intending to measure the volume flow of oil being tested and regulate the transfer of oils being tested to respective constant volume flows?
15. With respect to claim 26, "measurement of differential pressures," and "measurement of the surface foam" are not steps and it's unclear what applicant is claiming.
16. With respect to claims 26 and 27 "time measurement and measurement of the respective differential pressures at regular intervals" are not steps and it's unclear what applicant is claiming.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
18. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
 1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

19. Claims rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,965,805 (Watts et al.) in view of U.S. Patent 6,612,187 (Lund).
20. With respect to claim 1, Watts et al. disclose a device for the determination of air content (abstract), of transmission oils (transmission fluids, Col. 1, lines 5-9), with an air-oil mixer (nozzle 13, in which the air is injected into the oil is considered to mix the air and the oil in the pipes 1 and 7 of Fig. 1) and a differential pressure sensor (16, Fig. 1), the device comprising a conveyor system (pump, 2, Fig. 1) which transports the oils through pipe lines (1 and 7, Fig. 1) of the air-oil mixer, a compressed air port (13, Fig. 1) that provides for air in the pipe lines (1 and 7, Fig. 1).
21. Watts et al. disclose that a sample is removed from the system and the entrained air is measured, Watts et al. does not disclose the in situ measurement of entrained air through a Venturi tube and a differential pressure sensor.
22. However, Lund discloses a Venturi tube (8, Fig. 1) with drill tubes upstream and downstream (16 and 18, Fig. 1) for the measurement of a gas fraction in a multiphase fluid (abstract). The invention uses the differential pressure measurements in order to determine the amount of gas in the fluid (Col. 3, lines 19-37).
23. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system disclosed by Watts et al., by including a Venturi member for determining the amount of entrained air in situ, as disclosed by Lund, in order to provide continuous measurements.

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24. With respect to claim 16, the air injection (13) is controllable (Col. 3, lines 25-31) and is considered to be turbulent for the purpose of mixing the air and the oil.
25. With respect to claims 17 and 20, the reservoir (4, Fig. 1) is considered to be a separator in that foam will rise to the top.
26. With respect to claim 18, the dimensions of the separator are considered to be a mere optimization of workable ranges which would be obvious to one of ordinary skill in the art through routine experimentation (See MPEP 2144.05).
27. With respect to claim 23, the computer 50, disclosed in Lund is considered to be an AD converter map and a calculator. The computer is connected to the differential pressure detector for the purpose of determining the gas fraction in the fluid under test.
28. With respect to claim 24, Watts et al. disclose a gear pump (7) to convey fluid through they system.

Allowable Subject Matter

29. Claims 19, 21, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Pertinent Prior Art

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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31. U.S. Patent 5,375,459 (Gerke et al.) discloses a system for measuring air separation behavior through a foam cell.
32. U.S. Patent 5,243,848 (Cox et al.) discloses a system for determining the volume of gases in oil.

Conclusion

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Christensen whose telephone number is 571-272-2683. The examiner can normally be reached on Monday - Friday, 8am - 5pm.
34. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
35. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service

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Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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A handwritten signature in black ink, appearing to read "Hezron Williams", with a long, sweeping horizontal line extending to the right.

HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800